

III. REMARKS

1. Claims 1-15 remain in the application. Claims 1-3, and 5-15 have been amended.
2. Claim 13 has been amended to overcome the informalities objections.
3. Claims 10, 11, and 15 have been amended to overcome the 35 USC 112, second paragraph rejections.
4. Claims 1-3, 5-12, and 14 have been amended to eliminate the term "adapted."
5. Applicants respectfully submit that claims 1-9 and 12-14 are patentable over the combination of Asami. (US 2001/0026568) and Esherick et al. (US 5,054,028, "Esherick") under 35 USC 103(a).

The combination of Asami and Esherick fails to disclose or suggest a control unit comprising:

an angle unit configured for providing an angular variation signal indicative of an angular variation of the second beam, and

an analysis unit configured for receiving the angular variation signal and controlling the reflection angle of the reflecting dispersion device dependent on the angular variation signal,

as recited by claim 1.

The combination of Asami and Esherick fails to disclose or suggest:

providing an angular variation signal indicative of an angular variation of the second beam, and

controlling the reflection angle of the reflecting dispersion device dependent on the angular variation signal,

as recited by claim 14.

The Examiner properly points out that Asami fails to disclose these features. Applicants respectfully submit that Esherick also fails to disclose or suggest these features.

Esherick couples out a portion of the internal cavity beam and monitors this for angular displacement. No other embodiment is provided or suggested by Esherick. This is disadvantageous because it results in a power loss in the cavity. The present claims overcome this shortcoming by analyzing the second beam as output by the laser gain medium external of the cavity.

Analyzing the second beam as output by the laser gain medium external of the cavity is nowhere described in the cited art and is clearly not obvious. If it were obvious to simply use the non-cavity beam for monitoring angular displacement, at least one reference would have mentioned such an obvious improvement. The present inventors have discovered that the angular displacement of the internal cavity beam is actually carried forward even through the laser gain medium into the output beam of the laser gain medium. Applicants note that the laser gain medium is not a mirror or similarly simple device but usually a rather complex semiconductor laser, and, unlike the prior art, the present invention recognizes and understands that such angular displacement of the cavity internal beam can even be seen in the laser output beam. Again, if this were obvious, it would be hard to understand how Asami, Esherick, or any other reference might simply ignore such a readily apparent improvement, as it is the common knowledge in the design of external cavity lasers to avoid any unnecessary power loss in the cavity.

Furthermore, Esherick uses the zero order beam from the grating (i.e. the beam reflected by the grating by the same angle as the incident beam). Such zero order beam, however, does not show any angular displacement, as the angular displacement results from the diffracted beams back-reflected to the grating. Accordingly, the zero order beam as used in Esherick cannot show any angular displacement resulting from the wavelength dependent properties of the reflecting dispersion device and is thus absolutely unsuitable for use according to the present claims.

Therefore, the combination of Asami and Esherick fails to render claims 1-9 and 12-14 unpatentable.


For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

AGILENT TECHNOLOGIES, INC.
Legal Department, DL429
Intellectual Property Administration
P. O. Box 7599
Loveland, Colorado 80537-0599

ATTORNEY DOCKET NO. 20030351-02

The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 50-1078.

Respectfully submitted,



Joseph V. Gamberdell, Jr.
Reg. No. 44,695

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Date

Perman & Green, LLP
425 Post Road
Fairfield, CT 06824
(203) 259-1800
Customer No.: 2512